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6. Safety Methodology

6.1 LLNL

are stated in the

Policy: HMPT Safety

Onsite packaging and transportation activities of are to be performed in a manner which ensures .

No LLNL employee is expected to perform a task that he or she considers unsafe, nor is any employee to knowingly commit an unsafe act. Employees are responsible for adhering to LLNL, facility, and operational policies and procedures.

Management's safety responsibility is fulfilled by:

- Ensuring that all equipment, experiments, and operations meet the requirements as stated in the *LLNL Health and Safety Manual*, an approved FSP, or an OSP.
 - Observing the work environment and establishing measures to control or eliminate risks associated with any experiment, operation, or equipment.
 - Taking appropriate corrective action whenever an incident occurs that results, or could result, in a serious accident.
 - Training employees according to the requirements of their job.
-

Achieving a Safe Work Environment

An optimum can be achieved most effectively by early identification and understanding of safety issues; close interaction among managers, employees, and safety specialists; and adherence to the policy and guidance of the .

Limiting

With respect to hazardous agents, both radioactive and nonradioactive, this protection is provided by limiting exposures of people and

contamination of property to levels that are .

**Definition:
ALARA**

ALARA means that individual and collective radiation doses to employees and radiation doses on the premises and in the surrounding environment shall be the minimum that can be achieved, while giving consideration to program requirements and economic limitations. The ALARA objective is achieved by integrating management involvement, education, and training, facility design, safety procedures, dosimetry, workplace monitoring, emergency preparedness, program evaluation, and benefit versus risk analysis.

**For More
Information**

Safety criteria for performing tasks at the Main Site and Site 300 are included in the *LLNL Health and Safety Manual* and the *Site 300 Safety and Operational Manual*.

6.2 Containment, Communication, and Controls

Specifically, health, safety, and environmental protection is effected by:

- Providing ***adequate*** of hazardous materials, substances, and wastes during each transfer to ensure retention of materials under normal onsite transport operations
 - Providing ***adequate*** to personnel who handle the material and to emergency responders so that the hazards of the material can be assessed
 - Adhering to including documented procedures and other administrative and/or physical control requirements, that:
 - Are appropriate for the level of containment and communication provided and
 - Take into account the possibility and consequences of credible accidents.
-

**Definition:
Containment**

For purposes of this manual, is defined as the features of the package that prevent the release of the material in an uncontrolled manner to the environment during normal, onsite transport operations.

Definition:

is defined as any labeling, marking, placarding, or written material used to

Communication	<p>convey information about the hazard and the contents of the package to package handlers, transport personnel, and emergency responders. Communication can be:</p> <ul style="list-style-type: none"> • Affixed to a package or container involved in the onsite transport of hazardous material • In possession of the responsible individual • Electronically transmitted • In or on the transport vehicle or in possession of the individual transporting the material.
Definition: Controls	<p>are defined as the administrative and/or physical controls that are applied to the transfer of hazardous materials, substances, and wastes, and which serve to mitigate risk during transport.</p>
For More Information	<p><i>Containment, communication, and controls</i> for are summarized in Sections 7, 8, and 9.</p>

6.3 and Health Hazards Communication

Material Safety Data Sheets	<p>require chemical manufacturers to provide which provide detailed information about on the physical, chemical, and physiological properties of a particular chemical and on recommended control procedures to be used during handling.</p> <p>Users of chemicals are required to keep a file of MSDSs on hand near the point of use. also maintains a central database of MSDSs.</p> <p>If an MSDS cannot be located, a supplemental MSDS is prepared by an LLNL. When a material of unknown toxicity (MOUT) is developed at LLNL, an MSDS is also prepared.</p>
For More Information	<p>LLNL's chemical safety program is described in greater detail in the , Chapter 8 (and supplements), "Hazardous Material Control," and Chapter 21 (and supplements), "Chemicals."</p>

6.4 Guidelines for

Compliance with Traffic Laws

Persons who operate (U.S. government, LLNL, rented, or private) onsite on official business are required to comply with all traffic laws of the State of California as defined by the . Drivers who are cited for traffic violations while engaged in official business are held responsible for the citations and may be subject to disciplinary action by LLNL as well.

Current Driver's License

Drivers of vehicles under the control of LLNL must have a from their resident state for the class of motor vehicle being operated.

Speed Limits

On Main Site, the maximum onsite speed limit is 40 km/h (25 mph) unless otherwise posted. At Site 300, the is 56 km/h (35 mph) unless otherwise posted.

Internal Traffic Citations

LLNL issues to employees cited for traffic violations onsite and may evoke an employee's onsite driving privileges. Employees who are cited for moving violations will be disciplined according to the procedure described in the *LLNL Health and Safety Manual*, Chapter 35.07.

For More Information

Refer to the *LLNL Health and Safety Manual*, Chapter 35, "Traffic," for more detail on LLNL policy regarding traffic control and safety.

6.5 Guidelines for

Policy:

LLNL operations must be planned to prevent exposure of personnel to ionizing radiation in excess of the limits stated in .

involving radioactive materials shall be conducted such that radioactive exposures are .

**For More
Information**

LLNL's detailed ALARA program is given in the Supplement 33.011, "Guide to Reducing Radiation Exposures to AS LOW AS REASONABLY ACHIEVABLE (ALARA)." LLNL's radiation safety program is described in greater detail in that manual's Chapter 33, "Ionizing Radiation," and supplements.

6.6 Guidelines for

**Policy:
Explosives
Handling**

Because of the serious consequences that can occur if explosives are handled improperly, LLNL's policy on handling explosives is that no operation involving explosives may be performed unless it is authorized by either an OSP or an FSP.

**For More
Information**

The primary DOE-prescribed standard for explosives operations and facilities is the .

6.7 Guidelines for

Supervisors are responsible for establishing safe procedures and providing the necessary protective equipment for personnel who handle chemicals.

The chemical user must evaluate each task in which chemicals are used before beginning the activity. This evaluation must include a consideration of the properties and reactivity of the chemicals or combination of chemicals.

6.8

LLNL employees who host visitors (students, participating guests, contract labor, vendors, etc.) must ensure that non-LLNL personnel receive initial training and continuing information regarding applicable safety policies. Non-LLNL personnel must follow LLNL regulations governing the safe and orderly conduct of operations.

Contracts with outside vendors and subcontractors specify the necessary requirements and guidance needed to extend the Laboratory's safety policy to contractors who perform work at the Main Site and at Site 300.

Contractor personnel are responsible to their employer who is obligated by contract to comply with pertinent LLNL environmental, health, and safety standards. When contractor personnel fail to comply with these standards, LLNL may issue a stop work order.

LLNL provides fire-fighting and emergency ambulance services for all activities at LLNL.

6.9 and Inspections

Periodically, several levels of LLNL management review the Laboratory's safety procedures and broader aspects of Laboratory operations to ensure their continued effectiveness.

The LLNL Assurance Office may conduct routine assessments of Laboratory operations. Assessment findings are forwarded to the appropriate line managers for review and action. Assessment records, resulting comments, and corrective actions are tracked by the Assurance Office. (See **Section 14** for more information on appraisals and corrective action.)

All programs, facilities, and buildings are subject to reviews and evaluations by the . The results of these reviews are forwarded to the appropriate department so that deficiencies can be corrected. Records of these reviews, resulting comments, and corrective actions are maintained by Hazards Control and tracked by the LLNL Assurance Review Office.

**Review of the
Onsite HMPT
Safety Manual**

A periodic review of the *Onsite Hazardous Materials Packaging and Transportation Safety Manual* will be performed to ensure its continued effectiveness.

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